



ecology and environment, inc.

160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415/777-2811

International Specialists in the Environment

October 4, 1990

Mr. John Moe
Southern Pacific Environmental Systems
One Market Plaza
San Francisco, California 94105

Dear John:

Re: September 6, 1990 Groundwater Sampling Results at Southern Pacific Transportation Company's (SPTCo.'s) High Street Property in Oakland, California

This letter presents the results of groundwater sampling conducted by Ecology and Environment, Inc., (E & E) on September 6, 1990 at SPTCo.'s property at 744 High Street in Oakland, California. Groundwater samples were obtained from six monitoring wells and a total of eight water samples (including one duplicate and one blank) were analyzed for PCBs according to EPA Method 608 by SPTCo.'s subcontract laboratory, ENSECO Analytical, West Sacramento, California. Sample locations are shown in Figure 3-2, which is taken from the Phase II Environmental Assessment Report (E & E, January 26, 1990). To briefly summarize the results, PCBs (Aroclor 1260) were detected at 0.59 ppb in monitoring well C-6. PCBs were not detected in the other monitoring wells. The remainder of this letter discusses the field activities and results in greater detail.

Groundwater sampling consisted of measuring the water level in each well, purging each well, and collecting groundwater samples. Groundwater level elevations measured on September 6, 1990 are presented in Table 1. The water level elevations in wells A-1 and B-2 were several feet higher than the levels observed in the other wells; the lowest water level was measured in well C-2. ~~Groundwater flow, therefore, appears to be toward the southeast in the northern portion of the property and toward the east and northeast in the central and southern portions, respectively.~~ Table 2 compares groundwater levels measured during the different sampling events. Groundwater levels were lower in all of the wells on September 6, 1990 than on June 25, 1990. Water level declines ranged from 1.49 feet in well C-6 to 2.99 feet in well C-2. The average drop was 2.24 feet. The groundwater flow direction on September 6, 1990 was similar to that observed on June 25, 1990.

1/24/90

report

page 4-1 states

"The groundwater level elevations suggest that flow beneath the property may be to the south

in the northern portion of the property (north of monitoring wells C-2 and C-6) and to the northwest in the southern portion of the property (south of monitoring wells C-2 and C-6)."

mbe/sp/1

recycled paper

9/5/90 report, page 3-16: "The groundwater elevations in the 3 monitoring wells suggest that there may be a southeasterly (down gradient) beneath

Mr. John Moe
October 4, 1990
Page Two

During purging of groundwater prior to sampling, the water quality parameters temperature, electrical conductivity, and pH were measured periodically. These measurements are presented in Table 3. During evacuation, all of the wells except B-2 bailed dry. The temperature and pH of groundwater was fairly constant throughout the property. At the end of evacuation, the temperature ranged from 18.0 to 19.5°C and the pH was 6. Electrical conductivities at the end of purging ranged from 860 to 1,250 umhos/cm. The lowest conductivity was measured in A-1 and the highest was measured in C-6. Generally, the conductivities decreased slightly during evacuation, however, in B-2, the conductivity increased from about 800 umhos/cm at the beginning of purging to 1,050 umhos/cm at the end after 20 gallons had been evacuated. This trend had not previously been observed in B-2 and it should be noted that on June 25, 1990, the conductivity of groundwater was markedly lower (approximately 500 umhos/cm). The reason for this difference is unclear, although, the lower conductivity in June, 1990 most likely is a seasonal variation related to recharge by infiltrating rainfall during the winter.

PCB results for the period of sampling are presented in Table 4 and the laboratory report is attached. The laboratory report submitted by ENSECO was reviewed for accuracy, precision, and completeness. Based on the level of quality control required by the method, the criteria for method blanks, accuracy, precision, sample holding times and method detection limits were met by the laboratory. In addition, the results for sample number MWC-6 was confirmed by dual-column confirmation for the detection of Aroclor-1260. All sample results are therefore considered valid based on the information provided by ENSECO.

~~On September 6, 1990, PCBs consisting entirely of Aroclor 1260 were detected at 0.59 ppb in monitoring well C-6.~~ PCBs were not detected in the other monitoring wells. During the period of sampling (May 26, 1989 through September 6, 1990), PCBs were previously detected on May 26 and July 28, 1989 in monitoring well C-2. On both dates, Aroclor 1260 was the only PCB detected. On May 26, 1989, Aroclor 1260 was detected at 1.0 ppb and on July 28, 1989, it was detected at 0.61 and 0.78 ppb (duplicates samples).

The PCB groundwater results that have been observed at the property indicate that PCBs in shallow groundwater are intermittent and localized. Although the levels that have been detected are slightly above the EPA proposed maximum contaminant level (PMCL) of 0.5 ppb (EPA Office of Drinking Water, May 1990), the unusable nature of the shallow groundwater, due primarily to low yields, indicates that the PCB levels detected are not environmentally significant.

Mr. John Moe
October 4, 1990
Page Three

The September 6, 1990 sampling was the last scheduled monitoring at the High Street property. In view of the intermittent occurrence and the low levels of PCBs in groundwater and the unusable nature of the shallow groundwater, additional monitoring is not warranted.

It has been our pleasure to provide environmental consulting services to you at the High Street property. If you have any questions concerning the findings and recommendations presented above, feel free to call me at 777-2811.

Sincerely,

ECOLOGY AND ENVIRONMENT, INC.

Robert H. Enkeboll
Project Geologist

cc: C. Moy
CN/RT Files

mbe/sp/1

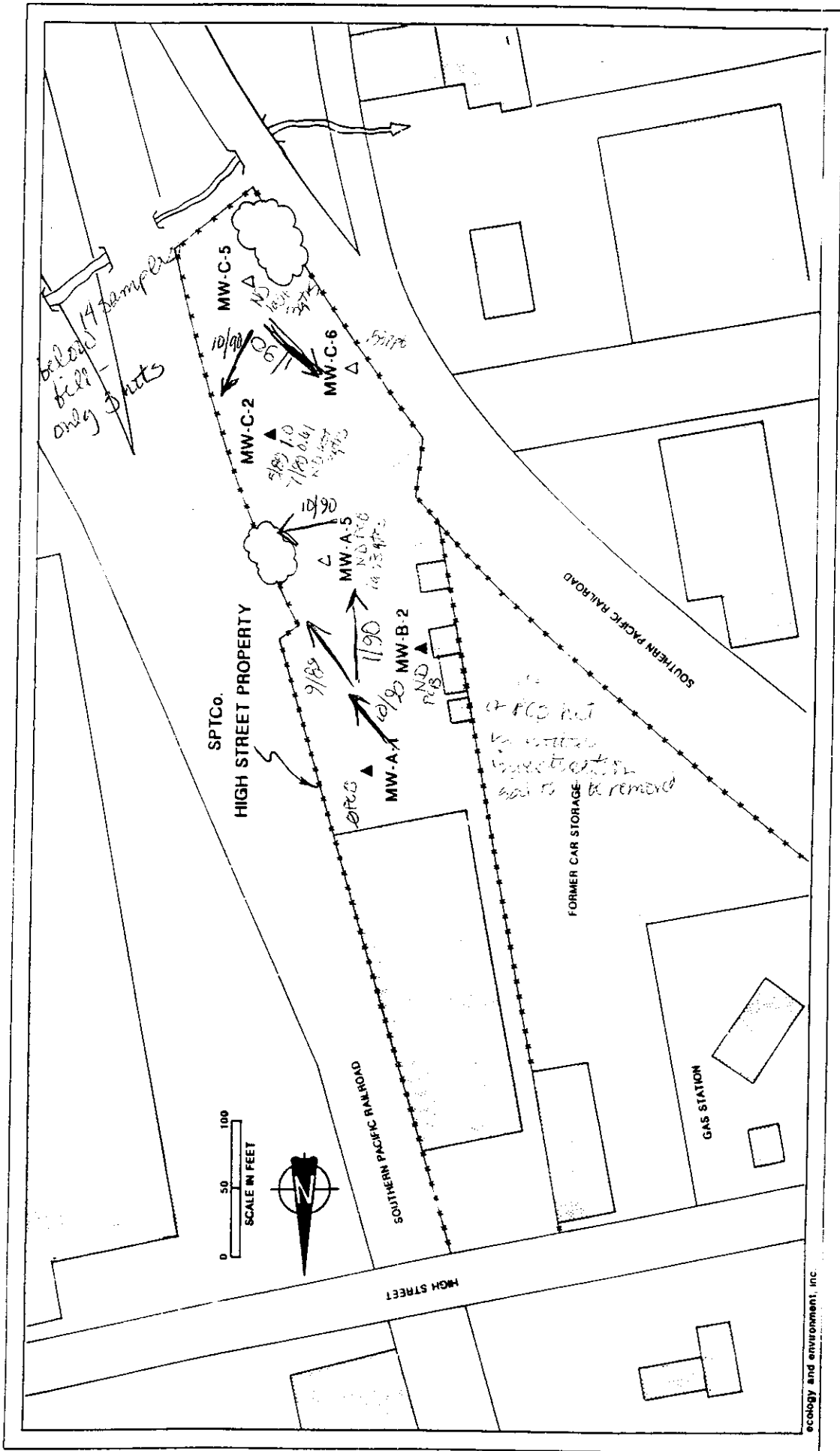


Figure 3-2 SPTCo. HIGH STREET PHASE II GROUNDWATER SAMPLING LOCATIONS

Groundwater direction ↙ ↘

Table 1
GROUNDWATER LEVEL ELEVATIONS
September 6, 1990

| Monitoring Well | Time | Depth to Water ₁ (bmp) ¹ | Datum Adjustment | Depth to Water ₂ (bgs) ² | Ground Surface Elevation (msl) ³ | Groundwater Elevation (msl) ³ |
|-----------------|------|---|------------------|---|--|---|
| A-1 | 0855 | 8.14 | 0.31 | 8.45 | 15.57 | 7.12 |
| A-5 | 0857 | 10.74 | 0.60 | 11.34 | 14.94 | 3.60 |
| B-2 | 0852 | 7.92 | 0.36 | 8.28 | 14.37 | 6.09 |
| C-2 | 0912 | 14.03 | 0.52 | 14.55 | 15.30 | 0.75 |
| C-5 | 0915 | 11.58 | 0.18 | 11.76 | 13.78 | 2.02 |
| C-6 | 0843 | 11.25 | 0.25 | 11.50 | 14.01 | 2.51 |

1. bmp = below measuring point
2. bgs = below ground surface
3. msl = mean sea level

Table 2

SUMMARY OF GROUNDWATER LEVEL ELEVATIONS
(mean sea level datum)

| Monitoring Well | May 26, 1989 | July 28, 1989 | November 22, 1989 | December 4, 1989 | June 25, 1990 | September 6, 1990 |
|-----------------|--------------|---------------|-------------------|------------------|---------------|-------------------|
| A-1 | 8.47 | 7.27 | 7.39 | 8.07 | 8.73 | 7.12 |
| A-5 | -- | -- | -- | 3.05 | 6.10 | 3.60 |
| B-2 | 8.00 | 6.36 | 6.23 | 7.15 | 8.04 | 6.09 |
| C-2 | 4.06 | 0.58 | | 1.80 | 3.74 | 0.75 |
| C-5 | -- | -- | -- | 3.47 | 4.93 | 2.02 |
| C-6 | -- | -- | -- | | 4.00 | 2.51 |

mbe/sp/t2 & t4

Table 3

WATER QUALITY PARAMETERS MEASURED DURING SAMPLING
September 6, 1990

| Monitoring Well | Gallons Evacuated | Temperature (°C) | Electrical Conductivity (umhos/cm) | pH | Notes |
|-----------------|-------------------|------------------|------------------------------------|----|---------------------------|
| A-1 | 2.5 | 20.0 | 1,000 | 6 | |
| | 7.5 | 20.0 | 930 | 6 | |
| | 12.5 | 19.5 | 950 | 6 | |
| | 17.0 | 19.5 | 860 | 6 | bailed dry; silty, turbid |
| A-5 | 2.5 | 18.5 | 1,200 | 6 | slightly turbid |
| | 5.0 | 18.5 | 1,000 | 6 | slightly turbid |
| | 9.0 | 18.0 | 1,050 | 6 | bailed dry |
| B-2 | 0.5 | 21.0 | 800 | 7 | |
| | 2.5 | 20.0 | 750 | 6 | |
| | 5.0 | 20.0 | 800 | 7 | |
| | 7.5 | 19.0 | 850 | 7 | |
| | 10.0 | 19.0 | 900 | 6 | |
| | 12.5 | 19.0 | 980 | 6 | |
| | 15.0 | 18.5 | 1,020 | 6 | |
| | 17.5 | 18.5 | 1,050 | 6 | |
| C-2 | 2.5 | 18.0 | 950 | 6 | |
| | 5.0 | 18.0 | 920 | 6 | |
| | 7.0 | 18.0 | 940 | 6 | bailed dry |
| C-5 | 5.0 | 18.0 | 990 | 6 | turbid |
| | 7.0 | 18.0 | 980 | 6 | turbid, sand; bailed dry |
| C-6 | 0.5 | 18.0 | 1,280 | 7 | |
| | 2.5 | 18.5 | 1,280 | 6 | |
| | 5.0 | 18.0 | 1,250 | 7 | |
| | 7.0 | -- | -- | -- | bailed dry |

Table 4
SUMMARY OF GROUNDWATER PCB RESULTS
 (ppb, ug/l)

| Monitoring Well | May 26, 1989 | July 28, 1989 | December 4, 1989 | June 25, 1990 | September 6, 1990 |
|-----------------|--------------|---------------|------------------|---------------|-------------------|
| A-1 | ND | -- | ND | ND | ND |
| A-1* | ND | -- | -- | ND | -- |
| A-5 | -- | -- | ND | ND | ND |
| B-2 | ND | -- | ND | ND | ND |
| B-2* | -- | -- | -- | ND | ND |
| C-2 | ND | ND | ND | ND | ND |
| C-2* | -- | ND | ND | ND | -- |
| C-5 | -- | -- | ND | ND | ND |
| C-5* | -- | -- | -- | ND | -- |
| C-6 | -- | -- | ND | ND | ND |
| Field Blank | ND | -- | ND | ND | ND |

* -- Duplicate Sample

mbe/sp/t2 & t4



September 28, 1990
Lab ID: 054710

Bob Enkeboll
Ecology and Environment
160 Spear Street
14th Floor
San Francisco, CA 94105

Dear Mr. Enkeboll:

Enclosed is the report for the eight aqueous samples for your SP-High Street Project, #SP-8060, which were received at Enseco-Cal Lab on 7 September 1990.

The report consists of the following sections:

- I Sample Description
- II Analysis Request
- III Quality Control Report
- IV Analysis Results

Data for this project was transferred to you via facsimile on 25 September 1990.

If you have any questions, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Weidenfeld". The signature is fluid and cursive, written over a white background.

Robert Weidenfeld
Program Administrator

du

cc: John Moe - S.P. Environmental

I Sample Description

See the attached Sample Description Information.

The samples were received under chain-of-custody.

II Analysis Request

The following analytical test was requested.

| <u>Lab ID</u> | <u>Analysis Description</u> |
|-----------------|-----------------------------|
| 054710-1 thru 8 | PCBs |

III Quality Control

A. Project Specific QC. No project specific QC (i.e., spikes and/or duplicates) was requested.

B. Method Blank Results. A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.

No target parameters were detected in the method blank associated with your samples at the reporting limit levels noted on the attached Method Blank Report.

C. Laboratory Control Samples - The LCS Program

Duplicate Control Samples. A DCS is a well-characterized matrix (blank water, sand or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits. The DCS results associated with your samples are on the attached Duplicate Control Sample Report.

Accuracy is measured by Percent Recovery as in:

$$\% \text{ recovery} = \frac{(\text{measured concentration})}{(\text{actual concentration})} \times 100$$

Precision is measured using duplicate tests by Relative Percent Difference (RPD) as in:

$$\text{RPD} = \frac{(\% \text{ recovery test 1} - \% \text{ recovery test 2})}{(\% \text{ recovery test 1} + \% \text{ recovery test 2})/2} \times 100$$

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/-3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. In cases where there is not enough historical data, EPA limits or advisory limits are set, with the approval of the Quality Assurance department.

IV Analysis Results

Test methods may include minor modifications of published EPA Methods such as reporting limits or parameter lists. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis; i.e., no correction is made for moisture content, unless the method requires or the client requests that such correction be made.

Results are on the attached data sheets.

QC LOT ASSIGNMENT REPORT
Semivolatile Organics by GC

| Laboratory Sample Number | QC Matrix | QC Category | QC Lot Number (DCS) | QC Run Number (SCS/BLANK) |
|-----------------------------|-----------|-------------|------------------------|------------------------------|
| 054710-0001-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0002-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0003-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0004-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0005-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0006-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0007-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0008-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |

METHOD BLANK REPORT
Semivolatile Organics by GC

| Analyte | Result | Units | Reporting Limit |
|--|--------|-------|-----------------|
| Test: 608-PCB-A | | | |
| Matrix: AQUEOUS | | | |
| QC Lot: 12 SEP 90-A QC Run: 12 SEP 90-A | | | |
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

DUPLICATE CONTROL SAMPLE REPORT
 Semivolatile Organics by GC

| Analyte | Concentration Spiked | Concentration Measured | | AVG | Accuracy Average(%) | | Precision |
|--|-------------------------|---------------------------|------|------|------------------------|--------|--------------------|
| | | DCS1 | DCS2 | | DCS | Limits | (RPD) DCS Limit |
| Category: PCB-A Matrix: AQUEOUS QC Lot: 12 SEP 90-A Concentration Units: ug/L | | | | | | | |
| Aroclor 1254 | 5.0 | 3.93 | 4.11 | 4.02 | 80 | 52-136 | 4.5 36 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

SAMPLE DESCRIPTION INFORMATION
for
Ecology and Environment

| Lab ID | Client ID | Matrix | Sampled | | Received Date |
|----------------|-----------|---------|-----------|------|------------------|
| | | | Date | Time | |
| 054710-0001-SA | MWA-1 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0002-SA | MWA-5 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0003-SA | MWB-2 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0004-SA | MWB-3 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0005-SA | MWB-4 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0006-SA | MWC-2 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0007-SA | MWC-5 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0008-SA | MWC-6 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |

PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWA-1

Lab ID: 054710-0001-SA

Enseco ID: 164820

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected
NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787

PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWA-5

Lab ID: 054710-0002-SA

Enseco ID: 164821

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected

NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787

PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWB-2

Lab ID: 054710-0003-SA

Enseco ID: 164822

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|--------------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected

NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

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PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWB-3

Lab ID: 054710-0004-SA

Enseco ID: 164823

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected
NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

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PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWB-4

Lab ID: 054710-0005-SA

Enseco ID: 164824

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected
NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

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PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWC-2

Lab ID: 054710-0006-SA

Enseco ID: 164825

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected
NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

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PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWC-5

Lab ID: 054710-0007-SA

Enseco ID: 164826

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected
NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

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PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWC-6

Lab ID: 054710-0008-SA

Enseco ID: 164827

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | 0.59 | ug/L | 0.50 |

ND = Not detected
NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787



ecology and environment, inc.

388 PLEASANTVIEW DRIVE, LANCASTER, NEW YORK 14068, TEL. 716/684-8000
International Specialists in the Environment

CHAIN-OF-CUSTODY RECORD

| Project No.: SP-8060 | | Project Name: SP - HIGH STREET | | Project Manager: COLIN MOY | | NUMBER OF CONTAINERS | REMARKS |
|--|------|----------------------------------|-------------|-------------------------------------|------------------|----------------------|----------------------------|
| Samplers: (Signatures) Bob Siskuba, Mrs. Subin | | Field Team Leader: Bob Enkebo 11 | | Field Team Leader: Bob Enkebo 11 | | | |
| STATION NUMBER | DATE | TIME | SAMPLE TYPE | SAMPLE INFORMATION | STATION LOCATION | | |
| | 9/6 | | X | EXPECTED COMPOUNDS (Concentration)* | low | X | Received in good condition |
| | 9/6 | | X | MWA-1 | low | X | |
| | 9/6 | | X | MWA-5 | low | X | |
| | 9/6 | | X | MWB-2 | low | X | |
| | 9/6 | | X | MWB-3 | low | X | |
| | 9/6 | | X | MWB-4 | low | X | |
| | 9/6 | | X | MWC-2 | low | X | |
| | 9/6 | | X | MWC-5 | low | X | |
| | 9/6 | | X | MWC-6 | low | X | |

| | | | |
|---|--------------------------------|---|--------------------------|
| Relinquished By: (Signature) <u>Bob Siskuba</u> | Date/Time: <u>9/6/90; 1550</u> | Received By: (Signature) | Date/Time: |
| Relinquished By: (Signature) | Date/Time: | Received By: (Signature) | Date/Time: |
| Relinquished By: (Signature) | Date/Time: | Received For Laboratory By: (Signature) <u>N. Subin</u> | Date/Time: <u>9-7-90</u> |

| | | | |
|------------------------------|------------|---|------------|
| Relinquished By: (Signature) | Date/Time: | Received For Laboratory By: (Signature) | Date/Time: |
| Relinquished By: (Signature) | Date/Time: | Received For Laboratory By: (Signature) | Date/Time: |
| Relinquished By: (Signature) | Date/Time: | Received For Laboratory By: (Signature) | Date/Time: |

| | |
|--------------------------------------|---------------------|
| Ship Via: FEDERAL EXPRESS | Date: <u>9/6/90</u> |
| BL/Airbill Number: <u>8336546676</u> | |

OAKLAND / HIGH ST.



ecology and environment, inc.

160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415/777-2811

International Specialists in the Environment

October 4, 1990

Mr. John Moe
Southern Pacific Environmental Systems
One Market Plaza
San Francisco, California 94105

Dear John:

Re: September 6, 1990 Groundwater Sampling Results at Southern Pacific Transportation Company's (SPTCo.'s) High Street Property in Oakland, California

This letter presents the results of groundwater sampling conducted by Ecology and Environment, Inc., (E & E) on September 6, 1990 at SPTCo.'s property at 744 High Street in Oakland, California. Groundwater samples were obtained from six monitoring wells and a total of eight water samples (including one duplicate and one blank) were analyzed for PCBs according to EPA Method 608 by SPTCo.'s subcontract laboratory, ENSECO Analytical, West Sacramento, California. Sample locations are shown in Figure 3-2, which is taken from the Phase II Environmental Assessment Report (E & E, January 26, 1990). To briefly summarize the results, PCBs (Aroclor 1260) were detected at 0.59 ppb in monitoring well C-6. PCBs were not detected in the other monitoring wells. The remainder of this letter discusses the field activities and results in greater detail.

Groundwater sampling consisted of measuring the water level in each well, purging each well, and collecting groundwater samples. Groundwater level elevations measured on September 6, 1990 are presented in Table 1. The water level elevations in wells A-1 and B-2 were several feet higher than the levels observed in the other wells; the lowest water level was measured in well C-2. Groundwater flow, therefore, appears to be toward the southeast in the northern portion of the property, and toward the east and northeast in the central and southern portions, respectively. Table 2 compares groundwater levels measured during the different sampling events. Groundwater levels were lower in all of the wells on September 6, 1990 than on June 25, 1990. Water level declines ranged from 1.49 feet in well C-6 to 2.99 feet in well C-2. The average drop was 2.24 feet. The groundwater flow direction on September 6, 1990 was similar to that observed on June 25, 1990.

mbe/sp/l

Mr. John Moe
October 4, 1990
Page Two

During purging of groundwater prior to sampling, the water quality parameters temperature, electrical conductivity, and pH were measured periodically. These measurements are presented in Table 3. During evacuation, all of the wells except B-2 bailed dry. The temperature and pH of groundwater was fairly constant throughout the property. At the end of evacuation, the temperature ranged from 18.0 to 19.5°C and the pH was 6. Electrical conductivities at the end of purging ranged from 860 to 1,250 umhos/cm. The lowest conductivity was measured in A-1 and the highest was measured in C-6. Generally, the conductivities decreased slightly during evacuation, however, in B-2, the conductivity increased from about 800 umhos/cm at the beginning of purging to 1,050 umhos/cm at the end after 20 gallons had been evacuated. This trend had not previously been observed in B-2 and it should be noted that on June 25, 1990, the conductivity of groundwater was markedly lower (approximately 500 umhos/cm). The reason for this difference is unclear, although, the lower conductivity in June, 1990 most likely is a seasonal variation related to recharge by infiltrating rainfall during the winter.

PCB results for the period of sampling are presented in Table 4 and the laboratory report is attached. The laboratory report submitted by ENSECO was reviewed for accuracy, precision, and completeness. Based on the level of quality control required by the method, the criteria for method blanks, accuracy, precision, sample holding times and method detection limits were met by the laboratory. In addition, the results for sample number MWC-6 was confirmed by dual-column confirmation for the detection of Aroclor-1260. All sample results are therefore considered valid based on the information provided by ENSECO.

On September 6, 1990, PCBs consisting entirely of Aroclor 1260 were detected at 0.59 ppb in monitoring well C-6; PCBs were not detected in the other monitoring wells. During the period of sampling (May 26, 1989 through September 6, 1990), PCBs were previously detected on May 26 and July 28, 1989 in monitoring well C-2. On both dates, Aroclor 1260 was the only PCB detected. On May 26, 1989, Aroclor 1260 was detected at 1.0 ppb and on July 28, 1989, it was detected at 0.61 and 0.78 ppb (duplicates samples).

The PCB groundwater results that have been observed at the property indicate that PCBs in shallow groundwater are intermittent and localized. Although the levels that have been detected are slightly above the EPA proposed maximum contaminant level (PMCL) of 0.5 ppb (EPA Office of Drinking Water, May 1990), the unusable nature of the shallow groundwater, due primarily to low yields, indicates that the PCB levels detected are not environmentally significant.

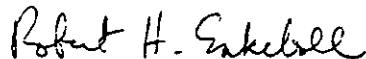
Mr. John Moe
October 4, 1990
Page Three

The September 6, 1990 sampling was the last scheduled monitoring at the High Street property. In view of the intermittent occurrence and the low levels of PCBs in groundwater and the unusable nature of the shallow groundwater, additional monitoring is not warranted.

It has been our pleasure to provide environmental consulting services to you at the High Street property. If you have any questions concerning the findings and recommendations presented above, feel free to call me at 777-2811.

Sincerely,

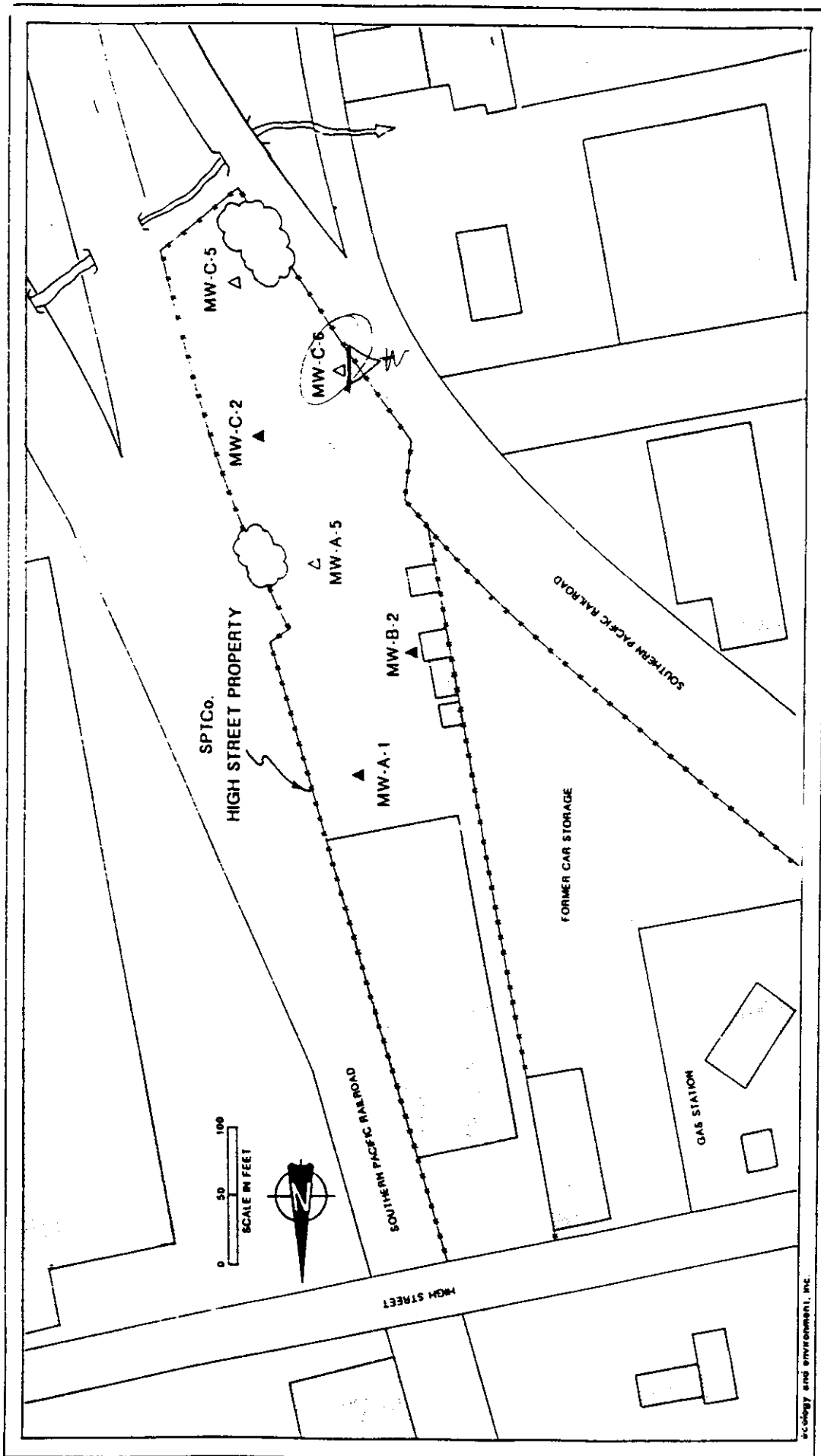
ECOLOGY AND ENVIRONMENT, INC.



Robert H. Enkeboll
Project Geologist

cc: C. Moy
CN/RT Files

mbe/sp/1



- ▲ PHASE I MONITORING WELL
- △ PHASE II MONITORING WELL

Figure 3-2 SPTCo. HIGH STREET
PHASE II GROUNDWATER SAMPLING LOCATIONS

Table 1
 GROUNDWATER LEVEL ELEVATIONS
 September 6, 1990

| Monitoring Well | Time | Depth to Water ₁ (bmp) ¹ | Datum Adjustment | Depth to Water ₂ (bgs) ² | Ground Surface Elevation (msl) ³ | Groundwater Elevation (msl) ³ |
|-----------------|------|---|------------------|---|--|---|
| A-1 | 0855 | 8.14 | 0.31 | 8.45 | 15.57 | 7.12 |
| A-5 | 0857 | 10.74 | 0.60 | 11.34 | 14.94 | 3.60 |
| B-2 | 0852 | 7.92 | 0.36 | 8.28 | 14.37 | 6.09 |
| C-2 | 0912 | 14.03 | 0.52 | 14.55 | 15.30 | 0.75 |
| C-5 | 0915 | 11.58 | 0.18 | 11.76 | 13.78 | 2.02 |
| C-6 | 0843 | 11.25 | 0.25 | 11.50 | 14.01 | 2.51 |

1. bmp = below measuring point

2. bgs = below ground surface

3. msl = mean sea level

Table 2

SUMMARY OF GROUNDWATER LEVEL ELEVATIONS
(mean sea level datum)

| Monitoring Well | May 26, 1989 | July 26, 1989 | November 22, 1989 | December 4, 1989 | June 25, 1990 | September 6, 1990 |
|-----------------|--------------|---------------|-------------------|------------------|---------------|-------------------|
| A-1 | 8.47 | 7.27 | 7.39 | 8.07 | 8.73 | 7.12 |
| A-5 | -- | -- | -- | 3.05 | 6.10 | 3.60 |
| B-2 | 8.00 | 6.36 | 6.23 | 7.15 | 8.04 | 6.09 |
| C-2 | 4.06 | 0.58 | -0.28 | 1.80 | 3.74 | 0.75 |
| C-5 | -- | -- | -- | 3.47 | 4.93 | 2.02 |
| C-6 | -- | -- | -- | -2.24 | 4.00 | 2.51 |

abe/sp/t2 & t4

Table 3

WATER QUALITY PARAMETERS MEASURED DURING SAMPLING
September 6, 1990

| Monitoring Well | Gallons Evacuated | Temperature (°C) | Electrical Conductivity (umhos/cm) | pH | Notes |
|-----------------|-------------------|------------------|------------------------------------|----|---------------------------|
| A-1 | 2.5 | 20.0 | 1,000 | 6 | |
| | 7.5 | 20.0 | 930 | 6 | |
| | 12.5 | 19.5 | 950 | 6 | |
| | 17.0 | 19.5 | 860 | 6 | bailed dry; silty, turbid |
| A-5 | 2.5 | 18.5 | 1,200 | 6 | slightly turbid |
| | 5.0 | 18.5 | 1,000 | 6 | slightly turbid |
| | 9.0 | 18.0 | 1,050 | 6 | bailed dry |
| B-2 | 0.5 | 21.0 | 800 | 7 | |
| | 2.5 | 20.0 | 750 | 6 | |
| | 5.0 | 20.0 | 800 | 7 | |
| | 7.5 | 19.0 | 850 | 7 | |
| | 10.0 | 19.0 | 900 | 6 | |
| | 12.5 | 19.0 | 980 | 6 | |
| | 15.0 | 18.5 | 1,020 | 6 | |
| | 17.5 | 18.5 | 1,050 | 6 | |
| C-2 | 2.5 | 18.0 | 950 | 6 | |
| | 5.0 | 18.0 | 920 | 6 | |
| | 7.0 | 18.0 | 940 | 6 | bailed dry |
| C-5 | 5.0 | 18.0 | 990 | 6 | turbid |
| | 7.0 | 18.0 | 980 | 6 | turbid, sand; bailed dry |
| C-6 | 0.5 | 18.0 | 1,280 | 7 | |
| | 2.5 | 18.5 | 1,280 | 6 | |
| | 5.0 | 18.0 | 1,250 | 7 | |
| | 7.0 | -- | -- | -- | bailed dry |

Table 4
 SUMMARY OF GROUNDWATER PCB RESULTS
 (ppb, ug/l)

| Monitoring Well | May 26, 1989 | July 28, 1989 | December 4, 1990 | June 25, 1990 | September 6, 1990 |
|-----------------|--------------|---------------|------------------|---------------|-------------------|
| A-1 | ND | -- | ND | ND | ND |
| A-1* | ND | -- | -- | -- | -- |
| A-5 | -- | -- | ND | ND | ND |
| B-2 | ND | -- | ND | ND | ND |
| B-2* | -- | -- | -- | -- | ND |
| C-2 | 1.0 | 0.61 | ND | ND | ND |
| C-2* | -- | 0.78 | ND | -- | -- |
| C-5 | -- | -- | ND | ND | ND |
| C-5* | -- | -- | -- | ND | -- |
| C-6 | -- | -- | ND | ND | 0.59 |
| Field Blank | ND | -- | ND | ND | ND |

* -- Duplicate Sample

mbe/sp/t2 & t4



September 28, 1990
Lab ID: 054710

Bob Enkeboll
Ecology and Environment
160 Spear Street
14th Floor
San Francisco, CA 94105

Dear Mr. Enkeboll:

Enclosed is the report for the eight aqueous samples for your SP-High Street Project, #SP-8060, which were received at Enseco-Cal Lab on 7 September 1990.

The report consists of the following sections:

- I Sample Description
- II Analysis Request
- III Quality Control Report
- IV Analysis Results

Data for this project was transferred to you via facsimile on 25 September 1990.

If you have any questions, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read 'Robert Weidenfeld'. The signature is fluid and cursive, with a large, sweeping flourish at the end.

Robert Weidenfeld
Program Administrator

du

cc: John Moe - S.P. Environmental

I Sample Description

See the attached Sample Description Information.

The samples were received under chain-of-custody.

II Analysis Request

The following analytical test was requested.

| <u>Lab ID</u> | <u>Analysis Description</u> |
|-----------------|-----------------------------|
| 054710-1 thru 8 | PCBs |

III Quality Control

- A. Project Specific QC. No project specific QC (i.e., spikes and/or duplicates) was requested.
- B. Method Blank Results. A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.

No target parameters were detected in the method blank associated with your samples at the reporting limit levels noted on the attached Method Blank Report.

- C. Laboratory Control Samples - The LCS Program

Duplicate Control Samples. A DCS is a well-characterized matrix (blank water, sand or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits. The DCS results associated with your samples are on the attached Duplicate Control Sample Report.

Accuracy is measured by Percent Recovery as in:

$$\% \text{ recovery} = \frac{(\text{measured concentration})}{(\text{actual concentration})} \times 100$$

Precision is measured using duplicate tests by Relative Percent Difference (RPD) as in:

$$\text{RPD} = \frac{(\% \text{ recovery test 1} - \% \text{ recovery test 2})}{(\% \text{ recovery test 1} + \% \text{ recovery test 2})/2} \times 100$$

Control limits for accuracy (percent recovery) are based on the average, historical percent recovery +/-3 standard deviation units. Control limits for precision (relative percent difference) range from 0 (identical duplicate DCS results) to the average, historical relative percent difference + 3 standard deviation units. In cases where there is not enough historical data, EPA limits or advisory limits are set, with the approval of the Quality Assurance department.

IV Analysis Results

Test methods may include minor modifications of published EPA Methods such as reporting limits or parameter lists. Reporting limits are adjusted to reflect dilution of the sample, when appropriate. Solid and waste samples are reported on an "as received" basis; i.e., no correction is made for moisture content, unless the method requires or the client requests that such correction be made.

Results are on the attached data sheets.

QC LOT ASSIGNMENT REPORT
Semivolatile Organics by GC

| Laboratory Sample Number | QC Matrix | QC Category | QC Lot Number (DCS) | QC Run Number (SCS/BLANK) |
|-----------------------------|-----------|-------------|------------------------|------------------------------|
| 054710-0001-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0002-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0003-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0004-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0005-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0006-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0007-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |
| 054710-0008-SA | AQUEOUS | PCB-A | 12 SEP 90-A | 12 SEP 90-A |

METHOD BLANK REPORT
Semivolatile Organics by GC

| Analyte | Result | Units | Reporting Limit |
|--|--------|-------|-----------------|
| Test: 608-PCB-A | | | |
| Matrix: AQUEOUS | | | |
| QC Lot: 12 SEP 90-A QC Run: 12 SEP 90-A | | | |
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

DUPLICATE CONTROL SAMPLE REPORT
Semivolatile Organics by GC

| Analyte | Concentration Spiked | Concentration Measured | | AVG | Accuracy Average (%) | | Precision (RPD) | |
|--|----------------------|------------------------|------|------|----------------------|--------|-----------------|---|
| | | DCS1 | DCS2 | | DCS | Limits | | |
| Category: PCB-A Matrix: AQUEOUS QC Lot: 12 SEP 90-A Concentration Units: ug/L | | | | | | | | |
| Aroclor 1254 | 5.0 | 3.93 | 4.11 | 4.02 | 80 | 52-136 | 4.5 | 3 |

Calculations are performed before rounding to avoid round-off errors in calculated results.

SAMPLE DESCRIPTION INFORMATION
for
Ecology and Environment

| Lab ID | Client ID | Matrix | Sampled | | Received Date |
|----------------|-----------|---------|-----------|------|------------------|
| | | | Date | Time | |
| 054710-0001-SA | MWA-1 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0002-SA | MWA-5 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0003-SA | MWB-2 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0004-SA | MWB-3 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0005-SA | MWB-4 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0006-SA | MWC-2 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0007-SA | MWC-5 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |
| 054710-0008-SA | MWC-6 | AQUEOUS | 06 SEP 90 | | 07 SEP 90 |

PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWA-1

Lab ID: 054710-0001-SA

Enseco ID: 164820

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected
NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787

PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWA-5

Lab ID: 054710-0002-SA

Enseco ID: 164821

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected
NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787

PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWB-2

Lab ID: 054710-0003-SA

Enseco ID: 164822

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected
NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787

PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWB-3

Lab ID: 054710-0004-SA

Enseco ID: 164823

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected

NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

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PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWB-4

Lab ID: 054710-0005-SA

Enseco ID: 164824

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected
NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787

PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWC-2

Lab ID: 054710-0006-SA

Enseco ID: 164825

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected

NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

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PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWC-5

Lab ID: 054710-0007-SA

Enseco ID: 164826

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | ND | ug/L | 0.50 |

ND = Not detected

NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787

PCBs

Method 608

Client Name: Ecology and Environment

Client ID: MWC-6

Lab ID: 054710-0008-SA

Enseco ID: 164827

Matrix: AQUEOUS

Sampled: 06 SEP 90

Received: 07 SEP 90

Authorized: 10 SEP 90

Prepared: 12 SEP 90

Analyzed: 18 SEP 90

| Parameter | Result | Units | Reporting Limit |
|--------------|--------|-------|-----------------|
| Aroclor 1016 | ND | ug/L | 0.065 |
| Aroclor 1221 | ND | ug/L | 0.065 |
| Aroclor 1232 | ND | ug/L | 0.065 |
| Aroclor 1242 | ND | ug/L | 0.065 |
| Aroclor 1248 | ND | ug/L | 0.065 |
| Aroclor 1254 | ND | ug/L | 0.50 |
| Aroclor 1260 | 0.59 | ug/L | 0.50 |

1000

ND = Not detected
NA = Not applicable

Reported By: Lisa Weiskopf

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787

